

REMARKS

Claims 1-43 are pending. Claims 1, 4-6, 8-10, 12-14, 16-18, 20-23, and 25-31 have been amended. Claims 32-43 have been added. No new matter has been introduced. Reexamination and reconsideration of the application are respectfully requested.

In the April 18, 2003 Office Action, the Examiner (a) allowed claims 18-27, 29, and 31, and (b) objected to claims 4, 8, and 12. The Examiner stated that claims 4, 8, and 12 were objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form incorporating all of limitations of their respective base claims and any intervening claims. Claims 4, 8, and 12 have been rewritten per the Examiner's suggestion are believed to be allowable. Applicant has amended all instances of "CD-RW disc" to "rewritable optical disc" in claims 1, 4-6, 8-10, 12-14, 16-18, and 20-31. Applicant respectfully submits that this amendment does not affect the Examiner's previous indication of allowability of claims 4, 8, 12, 18-27, 29, and 31.

The Examiner rejected claims 1-3, 5-7, 9-11, 13-17, 28, and 30. Claims 14-17 were rejected under 35 U.S.C. §112, ¶2, as being indefinite. Specifically, the Examiner stated that the phrase "located at a subsequent section of the pma area" was not understood. Applicant has amended the phrase to recite (with emphasis added): "located at *one of the subsequent sections* of the PMA area" to provide proper antecedent basis for this term. Accordingly, applicant respectfully submits that independent claim 14, as amended, is definite and the rejection of independent claim 14, as amended, under 35 U.S.C. §112, ¶2 should be withdrawn. Claims 15-17 all

directly depend from independent claim 14. Therefore, applicant respectfully submits that claims 15-17 are also definite and that the rejection of claims 14-17 under 35 U.S.C. §112, ¶2 should be withdrawn.

Claims 1, 28, and 30 were rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art or U.S. Patent No. 4,570,340 to Lee ("Lee"), in view of a combination of (b) U.S. Patent No. 5,659,745 to Inoue ("Inoue"), and (c) U.S. Patent No. 5,940,854 to Green ("Green"). Claims 2, 6, and 10 were rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art, Lee, or U.S. Patent No. 6,282,654 to Ikeda et al. ("Ikeda"), in view of a combination of (b) Inoue, and (c) Green. Claim 3 was rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art or Lee, in view of a combination of (b) Inoue, (c) Green, and (d) U.S. Patent No. 5,896,351 to Misaizu et al. ("Misaizu"). Claim 5 was rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art or Lee, in view of a combination of (b) Inoue, (c) Green, and (d) U.S. Patent No. 5,571,856 to Takeuchi ("Takeuchi"). Claim 9 was rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art, Lee, or Ikeda, in view of a combination of (b) Inoue, (c) Green, and (d) Takeuchi. Claims 7 and 11 were rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art, Lee, or Ikeda, in view of a combination of (b) Inoue, (c) Green, and (d) Misaizui. Claim 13 was rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art, Lee, or Ikeda, in view of a combination of (b) Inoue, (c) Green, and (d) Takeuchi. These rejections are respectfully traversed.

The present invention relates to a method and associated system for logically erasing contents of a rewritable optical disc in response to an erase command. The

rewritable optical disc is optically rewriteable and has a program area and a PMA area.

The program area is recorded with the contents as tracks, and the PMA area is recorded with at least two kinds of frames. One kind of the frames contains identification information for identifying the rewritable optical disc and another kind of the frames contains track information for indicating the tracks of the contents recorded in the program area. The PMA area is accessed in response to the erase command. All of the frames containing the track information from the PMA area are detected and deleted, thereby logically erasing all of the contents from the program area. The frames containing the identification information in the PMA area, are preserved so that the rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the rewritable optical disc. The frames containing the identification information are erasable from the PMA area and rewritable to the PMA area.

Claims 1, 28, and 30 were rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art ("APA") or Lee, in view of a combination of (b) Inoue and (c) Green. The Examiner stated that the applicant's APA and FIGS. 3-7 of Lee each disclose previous optical records having both id information and track address information contained in the PMA area. The Examiner further stated Inoue and the APA disclose logical erasing. The Examiner also stated that Green discloses the erasure of address information (the location of the information) while keeping the id of the disc type. The Examiner further stated that it would have been obvious to a person of skill in the art to combine the teachings of (a) the APA or Lee, (b) Inoue, and (c) Green in the direction of claims 1, 28, and 30. The Examiner also stated that the

motivation "would be to retain information indicative of the disc id, and erase the track address information as required when either updating or rewriting data information at the selected track location(s)."

Claims 2, 6, and 10 were rejected under 35 U.S.C. §103(a) as being obvious over (a) the APA, Lee, or Ikeda, in view of a combination of (b) Inoue and (c) Green. The Examiner stated that Ikeda discloses the reading of the serial number of a disc (this serial number being a disc id). The Examiner also stated that the ability of having the id information at "a part of a leading section of the PMA area" is also disclosed in Ikeda and in the description of FIG. 4 of Lee. The Examiner further stated that it would have been obvious to a person of skill in the art to combine the teachings of (a) the APA, Lee, or Ikeda (b) Inoue, and (c) Green in the direction of claims 2, 6, and 10. With respect to claims 2 and 10, the Examiner stated that requisite "motivation [to combine] is to place the id frames at the appropriate place in the leading section of the [PMA] area since id information requires less frames than the address information for all the tracks on the disc." With respect to claim 6, the Examiner stated that the requisite "motivation [for combining] is to logically arrange the placing of the id frames."

Claim 3 was rejected under 35 U.S.C. §103(a) as being obvious over (a) the APA art or Lee, in view of a combination of (b) Inoue, (c) Green, and (d) Misaizu. The Examiner stated that Misaizu teaches the ability of having ten-frame blocks. The Examiner further stated that it would have been obvious to a person of skill in the art to combine the teachings of (a) the APA art or Lee, in view of a combination of (b) Inoue, (c) Green, and (d) Misaizu in the direction of claim 3.

Claim 5 was rejected under 35 U.S.C. §103(a) as being obvious over (a)

admitted prior art or Lee, in view of a combination of (b) Inoue, (c) Green, and (d) Takeuchi. The Examiner stated that Takeuchi teaches the ability of having a reserving step rewrite id information when an interruption/power lost condition occurs in a composite disc system having volume identification information temporarily lost due to system failure. The Examiner stated that the motivation for combining the references was to provide for lost information.

Claim 9 was rejected under 35 U.S.C. §103(a) as being obvious over (a) the APA, Lee, or Ikeda, in view of a combination of (b) Inoue, (c) Green, and (d) Takeuchi. The Examiner stated that it would have been obvious to a person of skill in the art to combine the rewrite ability taught by Takeuchi with the teachings of Inoue, Green, and the APA, Lee, or Ikeda. The Examiner stated that the motivation for the combination would be to replace lost information.

Claims 7 and 11 were rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art, Lee, or Ikeda, in view of a combination of (b) Inoue, (c) Green, and (d) Misaizui. The Examiner stated that Misaizu teaches 10-frame sectionalization, and that the motivation for combining the references is to reduce the processing time by processing in block units.

Claim 13 was rejected under 35 U.S.C. §103(a) as being obvious over (a) admitted prior art, Lee, or Ikeda, in view of a combination of (b) Inoue, (c) Green, and (d) Takeuchi. The Examiner stated that Ikeda teaches the serial number of the disc is found preceding the address information, and Lee teaches the placing of the id information ahead of the track information. The Examiner stated that the motivation for combining the references is to replace lost information and permit resumption of

processing.

Independent claim 1, as amended, recites (with emphasis added):

"1. A method of logically erasing contents of a rewritable optical disc in response to an erase command, the rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, the method comprising:

accessing the PMA area in response to the erase command;
detecting and deleting all of the frames containing the track information from the PMA area, thereby logically erasing all of the contents from the program area; and

preserving the frames containing the identification information in the PMA area, so that the rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the rewritable optical disc, **wherein the frames containing the identification information are erasable from the PMA area and rewritable to the PMA area.**"

Applicant's APA discloses methods for erasing CD-RW discs by physical erasing or logical erasing. The APA also use of a Program Memory Area ("PMA") on which track information and unique disc identification is stored. Lee discloses a disk recording medium and method which uses an order table to correlate stored programs. Lee further discloses a format of a program area of a compact disc and a format of a disc description area of the disc.

Inoue discloses a file managing method having an erasure mode indicating the logical erasure of files for an information recording medium. Ikeda discloses an information recording/reproducing system utilizing a copy generation management system. Misaizu discloses a recording method for an optical drive in which 10 frames of data are written to a PMA.

Takeuchi discloses an optical disk write method in which the writing of a new file, the writing of a corrected file, and deletion of a file already written to the disk are

conducted with respect to a directory specified by a command issued to a write system.

Green discloses a method of attaching an identifier to an optical disk. As shown in FIG. 4, when the disk is loaded into a drive, an apparatus detects whether an identifier is present in the loaded disk. If the identifier is not detected, a new identifier is produced and recorded into a predetermined area of the disk. Conversely, if the identifier is detected, the apparatus operates to disable or bypass that portion of the process which generates and records the new identifier (see col. 3, line 65 – col. 4, line 3), thereby leaving the detected identifier as it is on the disk. When the identifier is written, however, it is written in a free area of PCA or PMA. Accordingly, Green teaches that when an identifier is detected it is reserved as-is.

Green does not teach, alone or in combination with any of the applicant's APA, Lee, Inoue, Green, Ikeda, Misaizu, or Takeuchi (collectively, "the cited references") a method of logically erasing contents of a rewritable optical disc in response to an erase command, including (a) accessing the PMA area in response to the erase command; (b) detecting and deleting all of the frames containing the track information from the PMA area, thereby logically erasing all of the contents from the program area; and (c) preserving the frames containing the identification information in the PMA area, so that the rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the rewritable optical disc, where *the frames containing the identification information are erasable from the PMA area and rewritable to the PMA area*. None of the cited references, alone or in combination, disclose that the frames containing the identification information are erasable from the PMA area and rewritable to the PMA area. Green merely teaches writing an identifier

to the disc, but does not disclose that the identifier is erasable from the PMA area.

Therefore, independent claim 1, as amended, distinguishes over the cited references.

Claims 2, 3, 5, 32, and 33 directly depend from independent claim 1, as amended, and therefore also distinguish over the cited references for the same reasons as those set forth above with respect to independent claim 1, as amended.

Independent claims 6, 10, 14, 28, 30, and 31, each as amended, all contain limitations similar to those of independent claim 1, as amended, and therefore also distinguish over the cited references for reasons similar to those set forth above with respect to independent claim 1, as amended. Claims 7, 9, 34, and 35 directly depend from independent claim 6, as amended, and therefore also distinguish over the cited references for the same reasons as those set forth above with respect to independent claim 6, as amended. Claims 11, 13, 36, and 37 directly depend from independent claim 10, as amended, and therefore also distinguish over the cited references for the same reasons as those set forth above with respect to independent claim 10, as amended. Claims 15-17, 38, and 39 directly depend from independent claim 14, as amended, and therefore also distinguish over the cited references for the same reasons as those set forth above with respect to independent claim 14, as amended. Claims 40-41 directly depend from independent claim 28, as amended, and therefore also distinguish over the cited references for the same reasons as those set forth above with respect to independent claim 28, as amended. Claims 42 and 43 directly depend from independent claim 30, as amended, and therefore also distinguish over the cited references for the same reasons as those set forth above with respect to independent claim 30, as amended.

Moreover, new claims 32-43 further distinguish over the cited references.

Specifically, representative claims 32 and 33 recite (with emphasis added):

"32. The method according to claim 1, further including a first mode during which the frames containing the identification information are erased from a first position of the PMA area and are then rewritten to the first position of the PMA area.

33. The method according to claim 32, further including a second mode during which the frames containing the identification information are erased from the first position of the PMA area and are then rewritten to a second position of the PMA area, the second position being different than the first position."

None of the cited references disclose such first or second modes. Accordingly, new claims 32 and 33 further distinguish over the cited references. New claims 34, 36, 38, 40, and 42 each contain limitations similar to those of new claim 32 and therefore also further distinguish over the cited references for reasons similar to those set forth above with respect to new claim 32. New claims 35, 37, 39, 41, and 43 each contain limitations similar to those of new claim 33 and therefore also further distinguish over the cited references for reasons similar to those set forth above with respect to new claim 33.

Applicant also respectfully submits that the Examiner is using impermissible hindsight in combining the cited references that there would have been no motivation to combine the cited references in the direction of the claims as stated by the Examiner. Applicant submits that a person of ordinary skill in the art at the time of the invention would have no reason to make piecemeal combinations of the *seven* references cited by the Examiner in the direction of the claims.

Therefore, applicant respectfully submits that the rejection of claims 1-3, 5-7, 9-11, 13, 28, and 30 under 35 U.S.C. §103(a) should be withdrawn.

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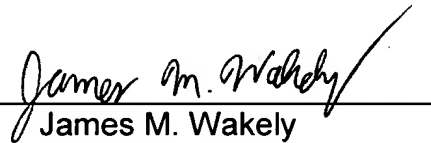
Applicant believes that the foregoing amendments place the application in condition for allowance, and a favorable action is respectfully requested. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call either of the undersigned attorneys at the Los Angeles telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference would advance prosecution of the application.

Respectfully submitted,

PILLSBURY WINTHROP LLP

Date: October 17, 2003

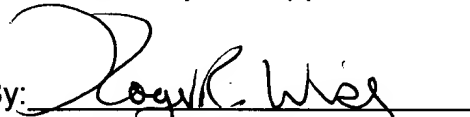
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